

ABSTRACT

5 This invention provides a system for producing differentiated cells from a stem cell population for use
wherever a relatively homogenous cell population is desirable. The cells contain an effector gene under
control of a transcriptional control element (such as the TERT promoter) that causes the gene to be
expressed in relatively undifferentiated cells in the population. Expression of the effector gene results in
expression of a cell-surface antigen that can be used to deplete the undifferentiated cells. Model effector
sequences encode glycosyl transferases that synthesize carbohydrate xenoantigen or alloantigen, which can
be used for immunoseparation or as a target for complement-mediated lysis. The differentiated cell
10 populations produced are suitable for use in tissue regeneration and non-therapeutic applications such as
drug screening.